

In the present Office Action is acknowledged that Hollander does not disclose the optical element of the sighting arrangement being a diffractive optical system. It is then stated that Mokry discloses that diffractive optical systems (elements) are commonly used in the art as beamsplitters and teaches that using a diffractive optical system as a beamsplitter is beneficial since the diffractive optical system is more lightweight and less costly (see the abstract, lines 1-4 of section 1 (introduction), lines 1-2 of section 4.2 (DOE as beamsplitter), and section 5 (Conclusions)).

It is then concluded that it would have been obvious to modify the device disclosed by Hollander by replacing the beamsplitter of the sighting arrangement with a diffractive optical system, as disclosed by Mokry, in order to make the device lighter in weight and less costly to manufacture.

This rejection is respectfully traversed for the following reasons. In its reversal of the rejection over Hollander the Board stated:

There is no evidence before us, in the form of at least one additional prior art reference, to convince us that the artisan would have found it obvious to have utilized a diffractive optical system to produce the claimed diffraction pattern, even if we agree with the examiner's views in the answer that diffractive optical systems were known in the art. The question remains, why would the artisan have chosen to use a diffractive optical system instead of or with the seven embodiments in Hollander without additional evidence to persuade the artisan to do so. [emphasis added] (Opinion, page 5)

Note that the Board does not base its reversal on the lack of a showing that diffractive elements exist. Rather, the reversal is based on the lack of a showing of a reason why the artisan would have ignored the teachings of Hollander and would have chosen to use a diffractive optical element instead.

The reasoning of the present Office Action is that the artisan would have chosen to use the diffractive optical element because it would have made the device lighter in weight and less costly to manufacture.

However, there is no teaching in Mokry that would have suggested to the artisan that diffractive optical elements would make the radiometer system, recited in claims 1 and 82, lighter and less costly to manufacture. Mokry discusses three systems suitable for use with diffractive

optical elements: 1) optical servo systems; 2) compact disc players; and 3) optical data storage. (Mokry; Introduction, first paragraph). The optical servo system is shown in Figure 9 and described in Sections 4.1 and 4.1.1. In the first paragraph of Section 4.1.1 it is stated that the grating is 2 mm from the detector. Further, in Section 4.2, cited in the Office Action as showing the use of the diffractive element as beamsplitter, the use of the diffractive element in a compact disc player is discussed. Again, this is a system where the distance between the diffractive element and the target is on the order of millimeters. Further, the diffractive optical element in these systems and the target are completely enclosed.

As taught by Hollander, most radiometers are fixed focus devices having a focal length of 60" and must form an image on a remote target (Fig. 1). Accordingly, the teaching of Mokry relating to uses of diffractive optical systems having focal lengths of 1 to 2 mm in essentially sealed devices, such as optical server systems and compact disc players, would not have motivated the artisan to choose such a diffractive element instead of the seven embodiments disclosed in Hollander.

There is no teaching in Mokry that would motivate the artisan use the diffractive optical system described in Mokry in a radiometer. Mokry does not teach that the use of a diffractive optical system, like that described in Mokry, would make a radiometer (as described in Hollander in recited in claim 1) lighter and less expensive to manufacture because that diffractive optical system is being used in a completely different environment. In fact, the use of the diffractive optical system described in Mokry could cause a radiometer to be heavier and more expensive to manufacture depending on such problems as the size of the laser and power supply required to make the spot visible and the techniques required for mounting and alignment. These factors would be entirely different in a radiometer and a compact disc player or optical servo system.

Further, the Board found the claim 1 not to be obvious over Hollander even though it acknowledged that diffractive optical systems were known to the artisan. Thus, the mere existence of diffractive optical systems as taught by Mokry is not sufficient to find claim 1 obvious. The Office Action fails to provide a reason why the artisan would have chosen to use the diffractive optical system instead of the embodiments disclosed in Hollander.

As described above, there is no teaching in Mokry that the use of diffractive optical elements would make the claimed combination lighter and less costly to manufacture. The only motivation for combining Hollander and Mokry comes from the teaching of the present patent

application. However, the use of the Applicant's own disclosure as a roadmap to piece together unrelated parts of prior art references is prohibited.

Further, the publication date of Mokry antedates the filing of Hollander by four years. Therefore, the lack of any teaching in Hollander relating to utilizing a diffractive optical system to outline the measurement spot clearly implies that such a use would not have been obvious to the artisan. The Hollander patent is assigned to Omega Engineering, Inc. (Omega) and as recited in the specification radiometers are illustrated in pages J1-J42 of the Omega Engineering Handbook. Further, price competition is fierce in the radiometer business and Omega had every incentive to reduce cost of manufacturing. The failure to disclose the use of a diffractive optical system in a radiometer to generate a light pattern for identifying the energy zone in Hollander or any other reference is a powerful indication that the use was not obvious.

Claims 3 and 82 are allowable for the same reasons as claim 1.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (925) 944-3320.

Respectfully submitted,



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